

Claims

[c1]

1. A system for requesting access to a network comprising:
 - A. a plurality of network nodes forming a network;
 - B. wherein said plurality of network nodes further comprises an access server;
 - C. wherein said network further comprises one or more active channels having a plurality of time slots; and
 - D. wherein said network nodes request access from said access server for said one or more active channels.

[c2]

2. A system for requesting access to a network as recited in claim 1, wherein said network is selected from the group consisting of a wireless network, a light frequency network, a power line network, an acoustic network, and a wired network.

[c3]

3. A system for requesting access to a network as recited in claim 1, wherein at least one of said network nodes requests access during a contention period.

[c4]

4. A system for requesting access to a network as recited in claim 3, wherein at least one of said network nodes requests access during said contention period marked by a packet.

[c5]

5. A system for requesting access to a network as recited in claim 1, wherein said network nodes request access by specifying one of the items selected from the group consisting of a queue identifier value, a queue priority value, a time to live value, and an access duration value.

[c6]

6. A system for requesting access to a network as recited in claim 5, wherein at least one of said network nodes requests access based a random back off contention algorithm.

[c7]

7. A system for requesting access to a network as recited in claim 5, wherein said network nodes request access based on a logical ring access algorithm.

[c8]

8. A system for requesting access to a network as recited in claim 5, wherein said network is selected from the group consisting of a wireless network, a light frequency network, a power line network, an acoustic network, and a wired network.

[c9]

9. A system for requesting access to a network as recited in claim 5, wherein said queue identifier value consists of a high queue value and a low queue value.

[c10]

10. A system for requesting access to a network as recited in claim 5, wherein said queue priority value has a range of 0 to 15.

[c11]

11. A system for requesting access to a network as recited in claim 5, wherein said time to live value has a range from 0 to 1024.

[c12]

12. A system for requesting access to a network as recited in claim 5, wherein said access duration has a range from 0 to 1024.

[c13]

13. A system for requesting access to a network as recited in claim 5, wherein at least one of said nodes re-requests access based on upper layer packet reassembly.

[c14]

14. A system for granting access to a network comprising:

A. a plurality of network nodes forming a network;

B. wherein said plurality of network nodes further comprises an access server;

C. wherein said network further comprises one or more active channels having a plurality of time slots; and

D. wherein access to said one or more active channels is granted by said access server.

[c15]

15. A system for granting access to a network as recited in claim 14, wherein said network is selected from the group consisting of a wireless network, a light frequency network, a power line network, an acoustic network, and a wired network.

[c16]

16. A system for granting access to a network as recited in claim 14, wherein said access server grants access after a contention period.

[c17]

17. A system for granting access to a network as recited in claim 16, wherein said access server grants access after a contention period marked by a packet.

[c18]

18. A system for granting access to a network as recited in claim 14, wherein said access server grants access based on one of the items selected from the group consisting of a queue identifier value, a queue priority value, a time to live value, and an access duration value.

[c19]

19. A system for granting access to a network as recited in claim 18, wherein said access server grants access based a random back off contention algorithm.

[c20]

20. A system for granting access to a network as recited in claim 18, wherein said access server grants access based on a logical ring access algorithm.

[c21]

21. A system for granting access to a network as recited in claim 18, wherein said network is selected from the group consisting of a wireless network, a light frequency network, a power line network, an acoustic network, and a wired network.

[c22]

22. A system for granting access to a network as recited in claim 18, wherein said queue identifier value consists of a high queue value and a low queue value.

[c23]

23. A system for granting access to a network as recited in claim 18, wherein said queue priority value has a range of 0 to 15.

[c24]

24. A system for granting access to a network as recited in claim 18, wherein said time to live value has a range from 0 to 1024.

[c25]

25. A system for granting access to a network as recited in claim 18, wherein said access duration has a range from 0 to 1024.

[c26]

26. A system for granting access to a network as recited in claim 18, wherein said access server re-grants access based on packet reassembly.

[c27]

27. A system for access server relinquishing on a network comprising:

A. a plurality of network nodes forming a network;

B. wherein said plurality of network nodes further comprises an access server;

C. wherein said network further comprises one or more active channels having a plurality of time slots; and

D. wherein said access server relinquishes access mastership based on lack of access requests on said one or more channels.

[c28]

28. A system for access server relinquishing on a network as recited in claim 27, wherein said access server notifies said network nodes of relinquishing access by on sending out a packet.

[c29]

29. A system for access server relinquishing on a network as recited in claim 27, wherein said network is selected from the group consisting of a wireless network, a light frequency network, a power line network, an acoustic network, and a wired network.

[c30]

30. A system for access server arbitration on a network comprising:

A. a plurality of network nodes forming a network;

- B. wherein said plurality of network nodes further comprises an access server;
- C. wherein said network further comprises one or more active channels having a plurality of time slots; and
- D. wherein at least one of said network nodes becomes said access server based on an idle period and a lack of response to access requests.

[c31]

31. A system for access server arbitration on a network as recited in claim 30, wherein said network is selected from the group consisting of a wireless network, a light frequency network, a power line network, an acoustic network, and a wired network.

[c32]

32. A method for requesting access to a network comprising:
- A. building an access request packet to request access to an active channel on a network node; and

B. sending said access request packet on any active channel to an access server on a time division multiplexed network which has a plurality of time slots wherein one or more of said time slots are grouped together to form said active channel.

[c33]

33. A method for requesting access to a network as recited in claim 32, wherein sending of said access request packet further comprises sending said access request packet on a network selected from the group consisting of a wireless network, a light frequency network, a power line network, an acoustic network, and a wired network.

[c34]

34. A method for requesting access to a network as recited in claim 32, wherein building of said access request packet further comprises building an access request packet based on one of the items selected from the group consisting of a queue identifier value, a queue priority value, a time to live value, and an access duration value.

[c35]

35. A method for requesting access to a network as recited in claim 32, wherein sending of said access request packet further comprises sending said access request packet during a contention period.

[c36]

36. A method for requesting access to a network as recited in claim 35, wherein sending of said access request packet further comprises sending said access request packet during a contention period marked by a packet.

[c37]

37. A method for requesting access to a network as recited in claim 35, wherein sending of said access request packet further comprises sending of said access request packet based a random back off contention algorithm:

[c38]

38. A method for requesting access to a network as recited in claim 35, wherein sending of said access request packet further comprises sending of said access request packet based on a logical ring access algorithm.

[c39]

39. A method for requesting access to a network as recited in claim 35, wherein sending of said access request packet further comprises sending said access request packet on a network selected from the group consisting of a wireless network, a light frequency network, a power line network, and a wired network.

[c40]

40. A method for requesting access to a network as recited in claim 32, further comprising the step of re-requesting access from said access server to said channel by said network node based on upper layer packet reassembly.

[c41]

41. A method for granting access to a network comprising:

A. receiving an access request packet on a time division multiplexed network which has a plurality of time slots wherein one or more of said time slots are grouped together to form an active channel, wherein said access request packet is received by an access server on said active channel from a network node ; and

B. sending an access grant packet on said active channel to said network node which grants access to said active channel.

[c42]

42. A method for granting access to a network as recited in claim 41, wherein receiving of said access request packet further comprises receiving said access request packet on a network selected from the group consisting of a wireless network, a light frequency network, a power line network, an acoustic network, and a wired network.

[c43]

43. A method for granting access to a network as recited in claim 41, wherein sending of said access grant packet is based on one of the items selected from the group consisting of a queue identifier value, a queue priority value, a time to live value, and an access duration value.

[c44]

44. A method for granting access to a network as recited in claim 41, wherein receiving of said access request packet further comprises receiving said access request packet during a contention period.

[c45]

45. A method for granting access to a network as recited in claim 44, wherein receiving of said access request packet further comprises receiving said access request packet during a contention period marked by a packet.

[c46]

46. A method for granting access to a network as recited in claim 44, wherein receiving of said access request packet further comprises receiving of said access request packet based a random back off contention algorithm.

[c47]

47. A method for granting access to a network as recited in claim 44, wherein receiving of said access request packet further comprises receiving of said access request packet based on a logical ring access algorithm.

[c48]

48. A method for granting access to a network as recited in claim 44, wherein receiving of said access request packet further comprises receiving said access request packet on a network selected from the group consisting of a wireless network, a light frequency network, a power line network, an acoustic network, and a wired network.

[c49]

49. A method for granting access to a network as recited in claim 41, further comprising the step of re-granting access to said network node on said channel by said access server based on upper layer packet reassembly.

[c50]

50. A method for access server relinquishing on a network comprising:

A. monitoring an active channel on a time division multiplexed network which has a plurality of time slots wherein one or more of said time slots are grouped together to form said active channel and wherein an access server monitors for one or more access request packets from one or more network nodes; and

B. relinquishing access mastership based the number of access request packets seen during one or more contention periods.

[c51]

51. A method for access server relinquishing on a network as recited in claim 50, wherein relinquishing access mastership further comprises seeing zero access request packets during one or more contention periods.

[c52]

52. A method for access server relinquishing on a network as recited in claim 50, further comprising the step of sending out a packet to indicate to said one or more network nodes the relinquishing of access mastership.

[c53]

53. A method for access server relinquishing on a network as recited in claim 50, wherein monitoring an active channel comprises monitoring said active channel on a

network selected from the group consisting of a wireless network, a light frequency network, a power line network, an acoustic network, and a wired network.

[c54]

54. A method for access server arbitration on a network comprising:

A. sending one or more access request packets from a network node on an active channel on a time division multiplexed network which has a plurality of time slots wherein one or more of said time slots are grouped together to form said active channel; and

B. becoming an access server based seeing an idle period and on the number of access response packets received in response to said one or more access request packets.

[c55]

55. A method for access server arbitration on a network as recited in claim 54 wherein becoming said access server further comprises becoming said access server based on seeing zero access response packets.

[c56]

56. A method for access server arbitration on a network as recited in claim 54, wherein becoming said access server further comprises becoming said access server which grants access based a contention resolution algorithm.

[c57]

57. A method for access server arbitration on a network as recited in claim 54, wherein sending said one or more access request packets further comprises sending said access request packets on a network selected from the group consisting of a wireless network, a light frequency network, a power line network, an acoustic network, and a wired network.